

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2022-0291; Project Identifier MCAI-2021-01321-A; Amendment 39-22081; AD 2022-12-09]

RIN 2120-AA64

Airworthiness Directives; British Aerospace (Operations) Limited and British Aerospace Regional Aircraft Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is superseding Airworthiness Directive (AD) 2017-15-06 for all British Aerospace Regional Aircraft Model HP.137 Jetstream Mk.1, Jetstream Series 200 and 3101, and Jetstream Model 3201 airplanes. AD 2017-15-06 required repetitively inspecting the main landing gear (MLG) for cracks and, if cracks were found, replacing the MLG with an airworthy part. Since the FAA issued AD 2017-15-06, the Civil Aviation Authority (CAA) of the United Kingdom (UK) superseded the mandatory continuing airworthiness information (MCAI) issued by the European Aviation Safety Agency (EASA) to correct an unsafe condition on these products. This AD retains the initial inspection and the calculation of hours time-in-service to flight cycle actions required by AD 2017-15-06, but decreases the repetitive inspection interval time from 1,200 flight cycles to 900 flight cycles. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective July 21, 2022.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of July 21, 2022.

The Director of the Federal Register approved the incorporation by reference of a certain other publication listed in this AD as of August 31, 2017 (82 FR 34846).

ADDRESSES: For British Aerospace service information identified in this final rule, contact BAE Systems (Operations) Ltd., Customer Information Department, Prestwick International Airport, Ayrshire, KA9 2RW, United Kingdom; phone: +44 3300 488727; fax: +44 1292 675704; email: RApublications@baesystems.com; website: <https://www.baesystems.com/Businesses/RegionalAircraft/>. For Héroux Devtek service information identified in this final rule, contact Héroux Devtek Product Support, 8, Pembroke Court, Manor Park, Runcorn, Cheshire, WA7 1TG, United Kingdom; phone: (855) 679-5450; email:

technical_support@herouxdevtek.com; website: <https://www.herouxdevtek.com/en/contact-us>. You may view this service information at the Airworthiness Products Section, Operational Safety Branch, FAA, 901 Locust, Kansas City, MO 64106. For information on the availability of this material at the FAA, call (817) 222-5110. It is also available at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2022-0291.

Examining the AD Docket

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2022-0291; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the MCAI, any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Doug Rudolph, Aviation Safety Engineer, General Aviation & Rotorcraft Section, International Validation Branch, FAA, 901 Locust, Room 301, Kansas City, MO 64106; phone: (816) 329-4059; email: doug.rudolph@faa.gov.

SUPPLEMENTARY INFORMATION: Background

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2017-15-06, Amendment 39-18966 (82 FR 34846, July 27, 2017) (AD 2017-15-06). AD 2017-15-06 applied to all British Aerospace Regional Aircraft Model HP.137 Jetstream Mk.1, Jetstream Series 200 and 3101, and Jetstream Model 3201 airplanes. AD 2017-15-06 required repetitively inspecting the MLG and, if cracks were found, replacing the MLG with an airworthy part. The FAA issued AD 2017-15-06 to detect and correct cracks in the MLG fitting at the pintle to cylinder interface, which could cause failure of the MLG.

The NPRM published in the Federal Register on March 28, 2022 (87 FR 17211). The NPRM was prompted by CAA UK AD G-2021-0015, dated November 24, 2021 (referred to after this as “the MCAI”). The MCAI states:

Cracks were found during early fatigue testing and in service on the main landing gear (MLG) main fitting at the pintle to cylinder interface.

This condition if not detected and corrected, could lead to structural failure of the MLG, possibly resulting in loss of control of the aeroplane during take-off or landing runs.

To address this unsafe condition, BAE Systems (Operations) Ltd published several Service Bulletins (ISB) which, in 1996, were consolidated into a single bulletin, SB 32-JA960142, to provide instructions for inspection. CAA issued AD 005-03-96 accordingly to require repetitive inspections of the MLG.

In 2014 a crack was found which was below the critical crack length, but unusually large compared to similar cracks previously found in service. Further investigation into the subject determined that the existing inspection intervals remain valid but also showed that the assumed detectable defect size of a 1.27mm [millimeters] (0.05 in) [inch] crack could not be guaranteed using the then defined accomplishment instructions for a high frequency eddy current (HFEC) or fluorescent dye penetrant (FDP) inspection.

Consequently, BAE Systems (Operations) Ltd issued SB 32-JA960142 Revision 4, which provided an improved procedure for HFEC and FDP inspection to ensure the detection of cracks of 1.27 mm (0.05 in) length.

In response to this revision, EASA issued AD 2017-0053 (corrected 24 March 2017) addressing the need for revised inspection procedures.

Recently, an operator performing [EASA] AD 2017-0053 (referencing SB 32-JA960142 rev 4) identified 3 crack indications (13 mm, 3 mm & 8 mm) in close proximity, the total length of which was approximately 38 mm. This was an unusual report based on reported findings over the 24 years since the SB was initially released. In depth laboratory investigation of the discrepant part was undertaken, which found that the material was to specification and the cracks were fatigue in nature. The investigation was unable to establish a reason for the cracks being different in nature to those previously reported.

In response, a further damage tolerance analysis was performed, which identified the need to reduce the repeat inspection interval defined in [EASA] AD 2017-0053. That is, a reduction from a repeat of 1,200 flight cycles (FC) to a repeat of 900 FC.

For the reasons described above, this [CAA UK] AD retains the requirements of CAA UK AD 005-03-96 (superseded by EASA AD) and EASA AD 2017-0053 (superseded by this CAA AD) and requires the accomplishment of repetitive inspections in accordance with new repetitive inspection requirements.

You may examine the MCAI in the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2022-0291.

In the NPRM, the FAA proposed to retain the initial inspection, the calculation of hours time-in-service to flight cycle action, and replacement as necessary required by AD 2017-15-06, but proposed to decrease the repetitive inspection interval time from 1,200 flight cycles to 900 flight cycles. The FAA is issuing this AD to detect and correct cracks in the MLG. The unsafe condition, if not addressed, could cause failure of the MLG, which could result in loss of control of the airplane during takeoffs and landings.

Discussion of Final Airworthiness Directive

Comments

The FAA received no comments on the NPRM or on the determination of the costs.

Conclusion

These products have been approved by the aviation authority of another country and are approved for operation in the United States. Pursuant to the FAA's bilateral agreement with this State of Design Authority, it has notified the FAA of the unsafe condition described in the MCAI referenced above. The FAA reviewed the relevant data and determined that air safety requires adopting the AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. This AD is adopted as proposed in the NPRM.

Related Service Information Under 1 CFR Part 51

The FAA reviewed British Aerospace Jetstream Series 3100 & 3200 Service Bulletin 32-JA960142, Revision 5, dated December 13, 2019. This service information specifies procedures for doing a fluorescent penetrant inspection for cracks in the MLG. Alternatively, this service information specifies conducting an eddy current inspection for cracks in the MLG in accordance with Héroux Devtek Service Bulletin 32-56, Revision 4, dated August 16, 2016, which the Director of the Federal Register approved for incorporation by reference as of August 31, 2017 (82 FR 34846). This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

Other Related Service Information

The FAA reviewed British Aerospace Jetstream Series 3100 & 3200 Service Bulletin 32-JA960142, Revision 4, dated October 21, 2016. This service information specifies procedures for doing a fluorescent penetrant inspection for cracks in the MLG. Alternatively, this service information specifies conducting an eddy current inspection for cracks in the MLG in accordance with Héroux Devtek Service Bulletin 32-56, Revision 4, dated August 16, 2016, which the Director of the Federal Register approved for incorporation by reference as of August 31, 2017 (82 FR 34846).

Differences Between This AD and the MCAI

The MCAI does not apply to the Model HP.137 Jetstream Mk.1 airplanes or Model Jetstream Series 200 airplanes, whereas this AD does include those models because they have an FAA type certificate and share a similar type design in the affected area.

The MCAI and service information apply to Model Jetstream Series 3100 and Jetstream Series 3200 airplanes, which are identified on the FAA type certificates as Jetstream Model 3101 airplanes and Jetstream Model 3201 airplanes, respectively.

The MCAI gives credit for inspections and corrective actions accomplished before the effective date of the MCAI using “BAE Systems (Operations) Ltd SB 32-JA960142 at Revision 5, Revision 4, or Revision 3.” This AD does not give credit for Revision 3, dated August 31, 2016, as AD 2017-15-06 did not provide credit and the FAA did not receive any requests to use Revision 3 as an alternative method of compliance.

The MCAI requires compliance with all of the accomplishment instructions in the service information, which includes reporting the inspection results (if there is a crack) to the manufacturer. This AD does not require reporting information to the manufacturer.

Costs of Compliance

The FAA estimates that this AD affects 18 airplanes of U.S. registry.

The FAA estimates the following costs to comply with this AD:

Estimated Costs				
Action	Labor cost	Parts cost	Cost per airplane	Cost on U.S. operators
Inspection	6 work-hours × \$85 per hour = \$510 per inspection cycle	Not applicable	\$510 per inspection cycle	\$9,180 per inspection cycle.

The FAA estimates the following costs to replace the MLG based on the results of the inspection. The FAA has no way of determining the number of airplanes that might need this replacement:

On-Condition Costs

Action	Labor cost	Parts cost	Cost per airplane
Replace the MLG	1 work-hour × \$85 per hour = \$85	\$5,000	\$5,085

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

The FAA has determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39—AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by:

- a. Removing Airworthiness Directive 2017-15-06, Amendment 39-18966 (82 FR 34846, July 27, 2017); and
- b. Adding the following new airworthiness directive:



AIRWORTHINESS DIRECTIVE

www.faa.gov/aircraft/safety/alerts/
www.gpoaccess.gov/fr/advanced.html

2022-12-09 British Aerospace (Operations) Limited and British Aerospace Regional Aircraft:
Amendment 39-22081; Docket No. FAA-2022-0291; Project Identifier MCAI-2021-01321-A.

(a) Effective Date

This airworthiness directive (AD) is effective July 21, 2022.

(b) Affected ADs

This AD replaces AD 2017-15-06, Amendment 39-18966 (82 FR 34846, July 27, 2017) (AD 2017-15-06).

(c) Applicability

This AD applies to British Aerospace (Operations) Limited Model HP.137 Jetstream Mk.1, Jetstream Series 200, and Jetstream Model 3101 airplanes and British Aerospace Regional Aircraft Model Jetstream Model 3201 airplanes, all serial numbers, certificated in any category.

(d) Subject

Joint Aircraft System Component (JASC) Code 3211, Main Landing Gear Attach Section.

(e) Unsafe Condition

This AD was prompted by cracks found on the main landing gear (MLG) main fitting at the pintle to cylinder interface. The FAA is issuing this AD to detect and correct cracks in the MLG. The unsafe condition, if not addressed, could cause failure of the MLG, which could result in loss of control of the airplane during takeoffs and landings.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Actions

(1) Within the compliance times listed in paragraph (g)(1)(i) or (ii) of this AD, as applicable, inspect the MLG for cracks by following Appendix 1, sections A through G, of British Aerospace Jetstream Series 3100 & 3200 Service Bulletin 32-JA960142, Revision 5, dated December 13, 2019; or the Accomplishment Instructions, sections A through D(6), in Héroux Devtek Service Bulletin 32-56, Revision 4, dated August 16, 2016.

(i) For airplanes that have been inspected in accordance with AD 2017-15-06: Before the MLG accumulates 900 flight cycles since the last inspection or within 150 flight cycles after the effective date of this AD, whichever occurs later, and thereafter at intervals not to exceed 900 flight cycles.

(ii) For airplanes that have not been inspected in accordance with AD 2017-15-06: Before the MLG accumulates 8,000 flight cycles since first installation on an airplane or within 50 flight cycles after the effective date of this AD, whichever occurs later, and thereafter at intervals not to exceed 900 flight cycles.

(2) If any crack is found during any inspection required by paragraph (g)(1) of this AD, before further flight, replace the MLG with an airworthy MLG and continue the inspections as required by paragraph (g)(1) of this AD.

(3) The compliance times in paragraphs (g)(1)(i) and (ii) of this AD are presented in flight cycles (landings). If the number of total flight cycles is unknown, for purposes of this AD, the number of flight cycles is the hours time-in-service (TIS) accumulated on the airplane multiplied by 0.75. For example:

(i) 100 hours TIS x 0.75 = 75 flight cycles.

(ii) 1,000 hours TIS x 0.75 = 750 flight cycles.

(h) Alternative Methods of Compliance (AMOCs)

(1) The Manager, International Validation Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (i)(1) of this AD and email to: 9-AVS-AIR-730-AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(i) Related Information

(1) For more information about this AD, contact Doug Rudolph, Aviation Safety Engineer, General Aviation & Rotorcraft Section, International Validation Branch, 901 Locust, Room 301, Kansas City, MO 64106; phone: (816) 329-4059; email: doug.rudolph@faa.gov.

(2) Refer to Civil Aviation Authority (CAA) United Kingdom (UK) AD G-2021-0015, dated November 24, 2021, for more information. You may examine the CAA UK AD at <https://www.regulations.gov> in Docket No. FAA-2022-0291.

(j) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(3) The following service information was approved for IBR on July 21, 2022.

(i) British Aerospace Jetstream Series 3100 & 3200 Service Bulletin 32-JA960142, Revision 5, dated December 13, 2019.

(ii) [Reserved]

(4) The following service information was approved for IBR on August 31, 2017 (82 FR 34846).

(i) Héroux Devtek Service Bulletin 32-56, Revision 4, dated August 16, 2016.

(ii) [Reserved]

(5) For British Aerospace service information identified in this AD, contact BAE Systems (Operations) Ltd., Customer Information Department, Prestwick International Airport, Ayrshire, KA9 2RW, United Kingdom; phone: +44 3300 488727; fax: +44 1292 675704; email: RApublications@baesystems.com; website:

<https://www.baesystems.com/Businesses/RegionalAircraft/>. For Héroux Devtek service information identified in this AD, contact Héroux Devtek Product Support, 8, Pembroke Court, Manor Park, Runcorn, Cheshire, WA7 1TG, United Kingdom; phone: (855) 679-5450; email: technical_support@herouxdevtek.com; website: <https://www.herouxdevtek.com/en/contact-us>.

(6) You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 901 Locust, Kansas City, MO 64106. For information on the availability of this material at the FAA, call (817) 222-5110.

(7) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email: fr.inspection@nara.gov, or go to: <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on June 6, 2022.

Gaetano A. Sciortino,
Deputy Director for Strategic Initiatives, Compliance & Airworthiness Division, Aircraft
Certification Service.

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